

# Unmanned Carrier-Launched Airborne Surveillance and Strike Broad Agency Announcement (BAA)

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Contracting Office Address: Department of the Navy, Naval Air Systems Command HQ, 47123 Buse Road, Suite 256, Patuxent River, MD 20670-1547

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## **1.0 Introduction**

During fiscal year 2010, the Office of the Chief of Naval Operations (OPNAV) updated the Power Projection from the Sea (PPfS) Beyond 2024 Capability Based Assessment (CBA) to address the 2018 timeframe. This CBA became the basis for the Unmanned Carrier Launched Airborne Surveillance and Strike (UCLASS) System Initial Capabilities Document (ICD).

The Naval Air Systems Command seeks proposals which conceptually demonstrate that a UCLASS system can provide a persistent Carrier Vessel-Nuclear (CVN) based Intelligence, Surveillance, and Reconnaissance (ISR) and strike capability supporting carrier air wing operations in the 2018 timeframe. In order to identify and explore available trade space, proposals must have a strong emphasis on an open, adaptive architecture and disciplined systems engineering. The program anticipates leveraging existing, deployed Department of Defense (DoD) systems to launch, recover, and control the air vehicle, transfer data in support of time critical strike operations, and conduct persistence ISR operations. The ongoing Unmanned Combat Air System-Demonstration program will inform UCLASS development and provide technology risk reduction for Unmanned Aircraft (UA) integration into carrier environments.

## **2.0 System Description**

The UCLASS system will enhance carrier capability, capacity, and versatility for the Joint Force Commander through integration of persistent and mission flexible UA into the Carrier Air Wing (CVW) by the 2018 timeframe. UCLASS will provide a UA capable of persistent surveillance with precision strike. It will be a major step forward toward achieving operation and integration of manned with unmanned systems within the CVW and will contribute to increasing sea-based capacity across the spectrum of maritime and littoral missions. It will be assigned as part of the CVW and will be responsive to tasking from the Joint Force Maritime Component Commander. A UCLASS detachment may operate independently or as part of an existing unit based upon future analysis of operating concepts. The system will be sustainable onboard the carrier, maintained by fleet Sailors, and it should minimize increases in the logistics footprint of the current CVW.

The UCLASS system will be jointly interoperable at Levels 1-4 in accordance with STANAG 4586 and capable of transferring control of the aircraft, sensors, and weapons between operators at DoD sea and land-based facilities. The system will utilize secure, jam-resistant Line-of-Sight (LOS) and Beyond-Line-of-Sight (BLOS) communications to transfer information and to receive control instructions. It should contain appropriately balanced measures to ensure survivability in the intended operational environments.

This BAA focuses on the entire UCLASS system.

The UCLASS system will consist of an Air Segment (including air vehicle, a mission system, and a remote vehicle control system); a Connectivity and Control Segment

(which includes interconnectivity to external DoD and carrier air wing assets, Navy and DoD networks and satellite systems, and existing DoD Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) systems); a CVN Segment (launch and recovery), and a System Support Segment (providing support for all of the system segments).

The envisioned capability will include CVN launch; CVN based flight control inside the Carrier Controlled Airspace (CCA) and within line-of-sight (LOS) of the CVN; and land-based mission control outside the CCA and LOS with the CVN utilizing existing DoD Unmanned Air System (UAS) control systems (modified as necessary); and recovery back aboard the CVN. Additionally, the air vehicle will be operable from BLOS land-based, fixed site airfields utilizing the remote vehicle control architecture, and interfaced with other Navy airborne systems during mission operations. Persistence should allow a single carrier to provide sustained 24/7 ISR capabilities even when conducting 12-hour flight deck operations. The envisioned system may require aerial refueling capability.

The air vehicle mission / avionics systems are anticipated to include Electro-Optic / Infra-Red (EO/IR) and Radio Frequency (RF) systems compatible with other CVW systems. Targeting quality information and tracks should be provided from the air vehicle directly to other CVW assets and to mission systems. Reach back to other ISR systems and the TCPED network will be achieved via wide and narrow band communication systems, vehicle-to-vehicle data links, and from network systems supporting BLOS and LOS connectivity. Weapons release will be accomplished under positive human control to achieve time critical mission objectives.

### **3.0 BAA Objective**

The overall BAA objective is to support pre-Milestone A program activities, including the Analysis of Alternatives (AoA), development of the Concept of Operations (CONOPS) and system requirements documents, and analysis of potential material solutions to meet a goal for operational capability in the 2018 timeframe. The following prioritized tasks are considered to be within the scope of the BAA efforts:

1. Analyze the UCLASS ICD (including identified performance attributes), other requirements documents, and associated Tactical Situations described in the UCLASS System Warfare Scenario Conditions document to develop appropriate CONOPS and system requirements.
2. Describe system design concepts and system architectures capable of achieving system requirements from a total system perspective (all Segments), including, but not limited to:
  - a. Shore based control systems (to include vehicle control, payload control and divert/expeditionary operations)
  - b. CVN (Aircraft Launch and Recovery Equipment, CVN Networks)
  - c. Air Vehicle
  - d. Mission management systems and sensors

- e. End-to-end data strategy including interoperability with Navy networks and envisioned TCPED functions
  - f. Commonality with other systems
  - g. Support and training systems
3. Identify cost, schedule, and technical performance drivers.
4. Assess the technical maturity of critical technologies. Identify plans to mature critical technologies and prototype systems, subsystems, or technologies.
5. Identify trade space and evaluate options that would offer balanced design compromises for cases where schedule and minimum cost is the top priority; overall system performance is the top priority; or schedule and minimum cost with growth capability is the top priority.
6. Recommend tailoring strategies to shorten development, test, and certification timelines.

Additional areas to consider in addressing these BAA activities include, but are not limited to, the following:

- A discussion, including quantitative or qualitative results, of constructive and/or virtual mission effectiveness modeling and simulation efforts that may be relevant to substantiate system design choices.
- Support for open, scalable and modular external and internal interfaces as provided in both the draft Mission System Interface Requirements Document (MSIRD) (if available) and the draft UCLASS Ship Interface Requirements Document (USIRD). Include considerations from the Naval Open Architecture (NOA) Contract Guidebook for Program Managers, Version 2.0, dated 30 June 2010. It may be beneficial to fill out the Open Architecture Assessment Tool (OAAT) version 3.0 which is located at <https://acc.dau.mil/oa>.
- System security requirements (i.e., Anti-Tamper, Information Assurance, etc.)
- System requirements to major subsystem attributes (i.e., air vehicle, weapons, sensors, TCPED requirements, information processing (both on-board vehicle and off-board), survivability and vulnerability, etc.). Explore trade space for low risk allocations.
- Sensitivity to key system attributes, including aircraft performance (endurance / persistence, aerial refueling, service ceiling, speed, maneuverability/agility, etc.); aircraft susceptibility to relevant threats; mission system capability (to include sensor performance and communications/network/autonomy requirements); and other attributes specific to the concepts being described.
- Sensor and communications systems performance as integrated into the air vehicle design concepts.
- Communications, Navigation, and Identification (CNI) processing, modular open system methodology, System Security Engineering, and design for Reliability and Maintainability.
- Potential for the concept designs to accommodate mission system packages tailored to specific ICD and/or tactical situations, including analysis of space, weight, power, cooling, sensor field of regard, etc.
- System support, training, and manpower requirements and strategies.

- Test and Evaluation (T&E) requirements, instrumentation, prospective T&E site recommendations, analyses, strategies, throughput, and historical fly rates to achieve test objectives.
- Cost estimates for system development.

It is expected that all analysis will be supported by data.

### **3.1 BAA Proposal Overview**

Each proposal shall describe the Offeror's approach for meeting the overall BAA objective. Offerors shall describe their ability to handle all levels of classified information associated with this BAA in their proposal.

Offerors are expected to use (and make available to the Government) their own performance, software, and cost estimating models. Government analysis will make use of Government accredited models, and the Government may offer use of Government models. Should there be differences in the models, the Government will coordinate with the industry teams to ensure a common understanding of the modeling approach and the process for data generation and analysis.

BAA reference documents classified up to the SECRET level (including the draft UCLASS Operational Concept Document (OCD), and TACSITs) will only be provided after contract award to Offerors with the capability to receive and safeguard those documents as verified through the Defense Industrial Security Facilities Database.

Proposal responses containing classified information (up to the SECRET level) shall be placed in a separate volume (Volume II) to the proposal and in a separate electronic media from the unclassified electronic media. The Government Point of Contact for classified information is listed in paragraph 6.5.

Offerors may propose to include information at other classification levels should that information be available and relevant to the BAA activities. Offerors shall contact the point of contact in paragraph 6.5 for submission instructions.

### **3.2 Technical Coordination Meetings (TCM) and Program Reviews**

In addition to a kickoff meeting at the Offeror's location, a mid-term and a final TCM / status review are anticipated, with the locations to be proposed. In order to facilitate Government requirements development, the focus of activity leading to the mid-term TCM should be on completion of tasks associated with paragraph 3.0, tasks 1-3.

The Offeror shall propose dates for conducting these TCMs and should align them with the Offeror's proposed schedule. The Offeror shall propose additional IPT Level Technical Interchange Meetings (TIM) as required to support the Offeror's BAA efforts. Alternative or innovative methods to maximize efficiency and effectiveness may be

proposed, such as the use of video teleconferencing, web enabled meetings such as Defense Connect Online (DCO), or similar technology.

### **3.3 Government Documents**

Offerors shall provide their CAGE code via email to the U.S. Government point of contact listed in paragraph 8.0 of this BAA. Following CAGE code verification to confirm DoD contractor status, the following limited distribution Government documents will be provided for developing BAA proposals and informational purposes.

- Draft UCLASS Ship Interface Requirements Document (USIRD)
- Draft UAS CVN Ship Suitability Matrix
- Draft UCLASS Security Classification Guide (SCG)

The draft UCLASS SCG is for use in developing offeror proposals. The Draft USIRD and Draft CVN Ship Suitability Matrix are reference documents for informational purposes for use in development of system concepts.

The following limited distribution and/or classified Government documents may be provided after contract award. Relevant classified documents will be provided separately following verification of CAGE code:

- ICD for UCLASS System
- UCLASS System Warfare Scenario Conditions (TACSITs description)
- Draft UCLASS Operational Concept Document (OCD)
- Draft UCLASS System Architecture
- Draft UCLASS Mission Segment Interface Requirements Document (MSIRD)
- Draft Test and Evaluation Strategy

### **4.0 Proposal Content**

All proposals submitted under the terms and conditions cited herein will be evaluated. To be considered for award, proposals shall demonstrate the feasibility of achieving the production of a UCLASS Air Vehicle and associated systems and subsystems. Proposals shall be submitted in two (2) volumes: Volume I, Technical Proposal with Cost Summary; and Volume II, Classified section of Technical Proposal.

**Volume I, Technical Proposal** volume shall include:

- An Executive Summary
  - A two-page Executive Summary with an overall description of how the Offeror will meet the BAA objectives. Offerors may include descriptions of the UCLASS System Design Concepts that will be developed during the BAA period of performance.

- A detailed description of the Offeror's proposed technical approach to meet the BAA objectives in Section 3.0, including a description of the Systems Engineering processes and products to be used.
- A description of the proposed system architecture.
- A schedule that identifies start and finish dates for BAA activities.
- A list of deliverables and proposed delivery dates.
- A list of specific Government Furnished Information requested to support BAA activities.

**Cost Summary** shall include:

- Top level elements of cost (e.g. labor hours, labor rates, indirect costs, other direct costs, etc). If proposed, Independent Research and Development (IRAD) and capital investments shall be identified separately from Government funded efforts.

**Volume II, Classified Volume** shall contain classified proposal data:

- Classified information up to the SECRET level shall be placed in a separate volume (Volume II) to the proposal and in a separate electronic media from the unclassified electronic media. The Government point of contact is listed in paragraph 6.5.
- Offerors may propose to include information at other classification levels should that information be available and relevant to the BAA activities. Offerors shall contact the point of contact in paragraph 6.5 for submission instructions.

#### **4.1 Proposal Submission**

The narrative material in the proposal shall utilize one and one-half line spacing, shall be typed or printed in Times New Roman font, with no smaller than 12-point font. Paper shall be 8-1/2 X 11 inches (standard size) with a minimum margin of 1 inch around the page. Text within tables shall be no smaller than 10-point Arial font, and text within graphics shall be no smaller than 9-point Arial font. Each Volume of the proposal shall be bound in three-ring binders to permit removal of sections.

The Cost Summary and Classified Volume shall be provided separately. The Cost Summary shall be in a spreadsheet format compatible with Microsoft Excel 2007.

All responsible sources may submit an offer which will be considered, but must do so on or before **2:00 PM Eastern Time on 29 April 2011** to be considered. Unclassified portions of proposals (Volume I and Cost Summary) shall be delivered to: Naval Air Systems Command, Attn: Mr. Robert Muretta, UCLASS Contracting Officer (AIR-2.4.4.5.1), phone: 301-757-5913; NAVAIRSYSCOM HQ, 47123 Buse Road, Suite 256, Patuxent River, MD 20670-1547. The classified volume of proposals (Volume II) shall be delivered in accordance with Paragraph 6.4 and 6.5.

A Department of Defense Contract Security Classification Specification (DD Form 254) will be incorporated as part of the contract at award. Offeror proposals shall include a draft of the DD Form 254 which should include every site where classified material may be handled, stored, or processed, where classified meetings may be conducted, or where personnel will require clearances.

The proposal page limit (inclusive of Volumes I and II, and Cost Summary) is fifty (50) pages total, including a maximum two (2) page Executive Summary, and a single cost page/spreadsheet. Pages exceeding this amount will not be evaluated. Offerors shall also submit an electronic copy of the proposal with each volume on separate CD-ROMs. The software format must be compatible with Microsoft Office 2007 Applications.

## **4.2 Proposal Evaluation**

The Government reserves the right to award one or more contracts from this BAA. The Government will evaluate each proposal independently. Proposals that fail to satisfy all evaluation factors and subfactors identified below will be considered deficient. A deficiency is defined as a material failure of a proposal to meet a Government requirement or a combination of significant weaknesses in a proposal that increases the risk of unsuccessful contract performance to an unacceptable level.

The Government intends to award on a best-value basis. Proposals will be evaluated using the following two (2) factors, which are listed in descending order of importance:

1. Technical - The following subfactors are listed in descending order of importance:
  - Feasibility and capacity of the Offeror to produce a UCLASS Integrated Air Vehicle and associated systems and subsystems
  - Approach and ability to meet the primary objectives and conduct the activities described in this BAA. Areas of emphasis within the primary objectives are:
    - Systems Engineering and requirements analysis processes.
    - Approach to development of system design concepts and system architectures.
    - Ability to support the 2018 timeframe operational requirement
2. Price Reasonableness
  - A proposal's price reasonableness will be evaluated based upon total price, supporting data, planned resources, and task schedule.

## **5.0 Contracts Planned for Award**

The Government intends to award one or more contracts based on proposals submitted in response to this announcement within a total budget of \$2,000,000. No contract is expected to exceed \$500,000. Under no circumstances will an Offeror be entitled to more than the Firm Fixed Price (FFP) it proposes for performance of the contract.



## **6.0. Period of Performance**

The Government expects to award contracts under this BAA during the 3rd quarter of FY11. The period of performance is anticipated to be nine (9) months from date of award.

## **6.1 Contract Type**

Firm Fixed Price (FFP).

## **6.2 Technical Data, Noncommercial Software, and Proprietary Rights**

The Offeror shall identify any proprietary rights in pre-existing analysis, data, prototypes or systems. Offers must explain how the performance goals identified in the BAA can be met in light of any proprietary restrictions. Additionally, the Offeror shall provide a list of the technical data and noncommercial computer software it will deliver with less than Unlimited rights in accordance with DFARS 252.227-7017, Identification and Assertion of Use, Release, or Disclosure Restrictions, which will be incorporated as an attachment to any resulting contract.

## **6.3 Proposal Preparation Costs**

BAA responses shall be submitted at no cost to the Government.

## **6.4 Proposal Classification**

Volume I and the Cost Summary of the proposal shall be UNCLASSIFIED. Classified responses to the UCLASS BAA shall be contained in Volume II only and are limited to the SECRET level. Information shall be marked in accordance with the draft UCLASS Security Classification Guide.

## **6.5 Classified Data**

No classified documents will be provided by the Government for proposal purposes. Classified documents for use during the BAA period of performance will be provided in accordance with paragraph 3.3 of this announcement. CAGE codes must be provided and verified for each location that will handle and store classified information.

Upon completion of performance, all classified documents shall be returned (including all copies that were created by the Offeror) in accordance with the following instructions: Packaging and handling of classified material must be in compliance with current DoD directives and procedures. All classified data submitted via United States Postal Service registered mail or through Federal Express carrier must be addressed as follows:

#### Outer Wrapper

Commander  
Naval Air Systems Command  
Hangar 101 Room A219  
44765 Ranch Road  
Patuxent River, MD 20670

#### Inner Wrapper

Commander  
Naval Air Systems Command  
Hangar 101 Room A219 (Attention Ms. Karen Abell)  
44765 Ranch Road  
Patuxent River, MD 20670

Offerors shall send a notification e-mail with the tracking number to Ms. Karen Abell, UCLASS Program Security Manager, email [karen.abell@navy.mil](mailto:karen.abell@navy.mil), phone (301) 342-5499; Hangar 101 Room A219, 44765 Ranch Road, Patuxent River, MD 20670.

### **7.0 Data Management**

The Offerors may propose a Data Management (DM) approach to facilitate data access and transfer, such as enabling Government personnel access to Offeror DM sites.

#### **7.1 Deliverables**

The Offeror shall provide the following contract deliverables in electronic form (Offeror formats are acceptable, software format must be compatible with Microsoft Office 2007 Applications):

##### Mid-term:

- TCM briefing slides describing findings of BAA activities complete/incomplete to date.
- Mid-term technical reports elaborating on findings of BAA tasks/objectives completed to date.

##### Final:

- TCM briefing slides describing final findings of BAA activities.
- Technical Reports with data developed to complete BAA tasks/objectives.

Offerors may propose additional deliverables.

## **8.0 UCLASS Program Point of Contact**

Technical and contracting questions regarding this announcement should be directed to Mr. Robert Muretta, UCLASS Contracting Officer (AIR-2.4.4.5.1), phone: 301-757-5913; NAVAIRSYSCOM HQ, 47123 Buse Road, Suite 256, Patuxent River, MD 20670-1547, or via email: [robert.muretta@navy.mil](mailto:robert.muretta@navy.mil).